1. *Transparency to X-Rays.*—By employing his *radiochronometer,* which has previously been described in these abstracts, the author has evolved the following laws relative to the specific transparency of matter to X-rays: (a) the specific opacity of a body for a given quality of X-rays and for a definite thickness of the standard is independent of the physical state of the body; (b) the specific opacity of a body is independent of the mode of grouping of its atoms or molecules; (c) the specific opacity is independent of the state of freedom or combination of the atoms. With the varieties of X-rays standardized by the author's method the classification, designation and rational usage of X-rays becomes a matter of precision.

2. *Lethargy and Hysteria.*—An account of a patient with recurrent attacks of hysterical lethargy which were characterized by an abnormal prolongation of the morning sleep, lasting on one occasion for twenty-two hours. As a result of numerous applications of a strong rythmically interrupted galvanic current applied to the neck and forehead, the duration of the attacks gradually lessened and normal sleep returned.

3. *Phototherapy Apparatus.*—A detailed description of an apparatus employing the iron-arc as the source of the violet and ultra violet radiations. In contra-distinction to the Finsen apparatus no intervening cooling cells are necessary as very little heat is radiated from the iron arc, which is inclosed in a metal chimney with suitable apertures for the exit of the rays and for observing the arc.

4. *Electrical Installation.*—A technical article.

5. *Villard's Rectifying Interruptor.*—A description of an ingenious and simple polarized device for rectifying alternate currents for actuating X-ray coils. A freely vibrating flat spring whose natural period of vibration approximately equals the period of the alternating current to be rectified is finally clamped at one end between the poles of a permanent horseshoe magnet. To the free end of this spring is attached a light metallic plunger which dips into a cup containing mercury. Surrounding the spring at a suitable point is a helix of wire which is traversed by the alternating current which thus alternately reverses the magnetic polarity of the spring. A detailed description of the various procedures necessary for the exact adjustment of phase is also added.

6. *Light Bath.*—A description of a light bath, made in the form of a frame composed of vertical tubes to which are attached the incandescent lamp sockets. The whole is covered by a canopy with an orifice at the top for the patient's head.

7. *Actuating X-ray Coils.*—A description of a rather unsatisfactory method for actuating induction coils on 220 volt circuits which consists in charging a large condenser directly from the 220 volt circuit and then immediately discharging it through the primary of the induction coil.

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1. Cerebrospinal Meningitis in the Form of Infantile Paralysis: Cytodiagnosis. RAYMOND and J. A. SICARD.
2. Infantile Spinal Paralysis Localized in the Muscles of the Superior Radicular Group of the Brachial Plexus. E. DUPRÉ and E. HUET.
3. A Particular Form of Relation of the Radicular Cells after Rupture of the Peripheral Nerves. G. MARINESCO.

1. *Cerebrospinal Meningitis and Infantile Paralysis.*—To recent works is due the review of acute infectious meningitis, the division into tuberculous and simple bacterial meningitis, and the classification of these according to the causal pathogenic agent. Two new methods, the bacteriological and the cytological study of the cephalorachidian liquid, obtained by lumbar puncture, have contributed to this end, and enable more exact diagnosis of the kind of case. Of the two methods the cytodiagnostic more frequently gives a positive response, more immediate and reliable than the bacteriological. A case is reported in detail of a child three and one-half years old, normal in every respect up to that age, who gradually lost appetite and became weak and ill, with symptoms of headache, painful vertebral column and articulations and contracture of muscles at the nape of the neck. After some improvement there occurred partial paralysis of the arms. Reaction of degeneration in certain muscles was determined.

Infantile paralysis seemed the diagnosis. True, brachial paralysis was present with well-marked radicular topography, but that was considered not unusual. At the advice of M. Jones, who made reservations in diagnosis and gave a hypothetical one of cerebrospinal meningitis, lumbar puncture was performed. A slightly cloudy liquid was obtained. On examination the percentage gave 80 polynuclear to 20 mononuclear cells. Second puncture, fifteen days later, gave a slightly clearer liquid with sufficiently abundant lymphocytes, the relation now being 70 mononuclear to 30 polynuclear. The diagnosis was altered to radicular brachial paralysis in the course of a cerebrospinal meningitis. Thus it was necessary to examine the etiological and pathological, if not specific unity of the meningeal and encephalomyelitic processes. One single pathogenic agent, pneumococcus or meningococcus, or still other microbes, may determine the disease by infection or by intoxication, either the localized lesions in the gray matter of the medulla, brain or roots of the medullary or of the peripheral nerves, or diffuse lesions in the different positions of the neurax. The idea of epidemicity, climate, age of the patient, primary or secondary localization of the meningeal affection are modifying factors of the virulence and vitality of the first pathogenic agent and may create diverse clinical types. Cytodiagnosis, examination of the cytological formula, quantitative and qualitative of the cephalorachidian liquid may give greater exactitude to the syndromes, still badly classified.

2. *Infantile Spinal Paralysis in the Brachial Plexus.*—Infantile spinal paralysis, paralysis and atrophy of the muscles may cause a disposition analogous to that in radicular lesions. A rare case is reported: a perfectly normal child of nineteen months with healthy parents was suddenly taken with a fever, but did not seem to suffer; after some days the right arm was noticed to be paralyzed; later the forearm hung in the habitual attitude of superior radicular paralysis of the brachial plexus; also the shoulder was slightly raised on the same side. Paralysis of the deltoid was shown by very pronounced distension of the scapulohumeral joint; finger movements were good. In electrical examination reaction of degenerescence was obtained in muscles of the Duchenne-Erb group. The child was regularly treated by galvanic electricity at the Salpêtrière. Infantile cervical paralysis was the diagnosis which immediately suggested itself; and the fact that in the inferior radicular group one muscle, the short abductor of the thumb, remained greatly altered, was in accord, and suggested acute anterior poliomyelitis. It may be asked whether there were not spinal or radicular alterations developed in the course of a cerebrospinal meningitis. Several interesting cases

of this nature are touched upon. The exact factor in diagnosis is given in lumbar puncture and examination of the cephalorachidian liquid; but this case came too late for that. Thus infantile paralysis is preferred to cerebrospinal meningitis as diagnosis, first on account of the precocity of the paralytic troubles, which are later in meningitis; also because of the absence of pain and stiffness of the side and neck; also the short duration of the paralysis in certain muscles.

If, as we believe, this was a case of acute anterior poliomyelitis, this observation furnishes a novel example of myelopathic muscular atrophy of radicular topography.

3. *Changes in Radicular Cells after Rupture.*—A type in this class of cells has been noted worthy of remark; the altered cell-bodies not only fail to present central chromatolysis, which is normally seen after the solution of the continuity of peripheral nerves, but on the contrary the chromophilic elements, sometimes massed and distributed concentrically about the nucleus, were strongly colored. Usually they form filaments more or less oblong in layers about the nucleus. The size of the filaments is variable, sometimes of short diameter, sometimes with longitudinal diameter scarcely exceeding transverse. Otherwise they look like long filaments. Illustrations are given with the article. Without the central zone was a peripheral arc, where colored corpuscles in the form of long filaments, much paler than those of the perinuclear zone, and of varied directions, were found; in the cell-body they were distributed in layers about the central zone; in the periphery the direction was longitudinal. In the protoplasmic prolongations the filaments were equally longitudinal, and notably one could see on some that not only in entering the cellular body did they keep their primary direction more or less independent of that shown by the corpuscles of the cellular body, but they crossed the cell-body to continue in protoplasmic prolongations nearby or on the opposite side. The special distribution of the chromophilic bodies of the protoplasmic prolongations following ablation of a more or less long nerve tract was found by the author, and the importance was hardly realized at first. The intimate relations of the tracts of fibrils of the achromatic substance with the corpuscles of Nissl was recognized; was this, then, a special reaction for ruptured nerve, as it has been noticed only in such cases? Rupture hardly explains it, as there was possibly a latent disposition brought into evidence by traumatism. After traumatism greater absorption of nutritive liquid takes place. This explains alteration in the volume of the cell; moreover, the fibrillar fascicles were more or less dispersed after serous discharge, so that the tract of chromophilic elements in the interior could be more easily seen. But this did not explain why the chromophilic elements were paler and less prominent in the periphery than in the central part. It may be admitted, the author says, from work done on the fine structure of cells of the spinal ganglia, that in certain cells the relation of the axis cylinder is closer to the peripheral fibrils, while in others the contrary is the case. JELLIFFE.

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1. Judges and Experts. NÄCKE.
2. Notice on Character Changes following Brain Injury. M. FRIEDMANN.
3. Further on Asthenic Paralysis. S. GOLDFLAM.

1. *Judges and Experts.*—A reply to Hoches' article (N. C'b't, No. 7) concerning the relations of the judge and the medical expert.